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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Thierry Coleou

Cabinet -02

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EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2863

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/501,370	<b>Applicant(s)</b> COLEOU, THIERRY	
	<b>Examiner</b> TOAN M. LE	<b>Art Unit</b> 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/08 has been entered.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. For instance, the method claim that would not qualify as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a § 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps.

### ***Claim Objections***

Claims 2, 10, and 13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. For instance, the step of determining a cross

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variogram of these data series and solving the co-kriging equation, which results in automatically deducing an estimate of the component that is common to the data series has been recited in the independent claims 1, 5, and 7, respectively.

### ***Claim Objections***

Claim 1 recites the limitation "the co-kriging equation" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims 5 and 7 recite the limitation "the co-kriging equation" in line 5. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by “Mapping of Soil Contamination by Using Artificial Neural Networks and Multivariate Geostatistics”, Kanevski et al. (referred hereafter Kanevski et al.).

Referring to claim 1, Kanevski et al. disclose a method of filtering at least two series of seismic data representative of the same zone, the method being characterized by determining a cross variogram of these data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1) and solving the co-kriging equation which results from this determination for automatically deducing an estimate of the component that is common to the data series (page 1128, last paragraph), and, from the estimate, resolving each of the data series into sum of their common

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component and orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4), the resolution of the data series being used for determining the topography of the subsoil (page 1129, 1<sup>st</sup> paragraph; Figure 4).

As to claim 2, Kanevski et al. disclose a method according to claim 1, characterized by determining a cross variogram of these data series and solving the co-kriging equation, which results in automatically deducing an estimate of the component that is common to the data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1; page 1128, last paragraph; page 1129, 1<sup>st</sup> paragraph; Figure 4).

Referring to claim 3, Kanevski et al. disclose a method according to claim 2, characterized by determining the orthogonal residues for the various data series by subtracting the estimated common component from each of the data series (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

As to claim 4, Kanevski et al. disclose a method according to claim 3, characterized by implementing kriging analysis to resolve said orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

Referring to claim 5, Kanevski et al. disclose a method of processing seismic data, comprising:

comparing two series of seismic data corresponding, for the same zone, to grids of at least one common attribute obtained at two distinct values of at least one given parameter, said comparing including filtering at least two series of data representative of the same zone by determining a cross variogram of these data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1) and solving the co-kriging equation which results from this determination for

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automatically deducing an estimate of the component that is common to the data series (page 1128, last paragraph), and from the estimate, resolving each of the data series into the sum of their common component and orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> paragraphs; Figure 4).

As to claim 6, Kanevski et al. disclose a method of filtering at least one series of seismic data representative of at least one zone, the method being characterized by identifying a model of a component of three-dimensional variability of its variogram (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1), subtracting said model from the experimental variogram, and solving the kriging equation corresponding to the different variograms in order to deduce an estimate of the corresponding variability component on the data series (page 1128, last paragraph; page 1129, 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> paragraphs).

Referring to claim 7, Kanevski et al. disclose a method of processing seismic data, comprising:

comparing two series of seismic data corresponding, for the same zone, to grids of at least one common attribute obtained at two different instants, said comparing including filtering at least two series of seismic data representative of the same zone by determining a cross variogram of these data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1) and solving the co-kriging equation which results from this determination for automatically deducing an estimate of the component that is common to the data series (page 1128, last paragraph), and from the estimate, resolving each of the data series into the sum of their common component and orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> paragraphs; Figure 4).

As to claim 8, Kanevski et al. disclose a method according to claim 1, characterized by determining the orthogonal residues for the various data series by subtracting the estimated common component from each of the data series (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

Referring to claim 9, Kanevski et al. disclose a method according to claim 8, characterized by implementing kriging analysis to resolve said orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

As to claim 10, Kanevski et al. disclose a method according to claim 5, characterized by determining a cross variogram of these data series and solving the co-kriging equation, which results in automatically deducing an estimate of the component that is common to the data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1; page 1128, last paragraph; page 1129, 1<sup>st</sup> paragraph; Figure 4).

Referring to claim 11, Kanevski et al. disclose a method according to claim 5, characterized by determining the orthogonal residues for the various data series by subtracting the estimated common component from each of the data series (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

As to claim 12, Kanevski et al. disclose a method according to claim 11, characterized by implementing kriging analysis to resolve said orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

Referring to claim 13, Kanevski et al. disclose a method according to claim 7, characterized by determining a cross variogram of these data series and solving the co-kriging equation, which results in automatically deducing an estimate of the component that is common

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to the data series (page 1127, lines 1-15; equation for  $2\gamma_{ij}(h)$ ; Figure 1; page 1128, last paragraph; page 1129, 1<sup>st</sup> paragraph; Figure 4).

As to claim 14, Kanevski et al. disclose a method according to claim 7, characterized by determining the orthogonal residues for the various data series by subtracting the estimated common component from each of the data series (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

Referring to claim 15, Kanevski et al. disclose a method according to claim 14, characterized by implementing kriging analysis to resolve said orthogonal residues (page 1128, last paragraph; Figure 3; page 1129, 1<sup>st</sup>, 2nd, and 3rd paragraphs; Figure 4).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOAN M. LE whose telephone number is (571)272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished



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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Toan Le

/Michael P. Nghiem/  
Primary Examiner, GAU 2863

January 15, 2009